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| Help | Logout | Interrupt |

| Main Menu | Search Form | Posting Counts | Show S Numbers | Edit S Numbers | Preferences | Cases |

Search Results -

Terms	Documents
L9 and find$ near4 pattern$	39

Database:

- US Patents Full-Text Database
- US Pre-Grant Publication Full-Text Database
- JPO Abstracts Database
- EPO Abstracts Database
- Derwent World Patents Index
- IBM Technical Disclosure Bulletins

Search: [   ]   Refine Search

Recall Text ⬍   Clear

Search History

DATE: Wednesday, March 05, 2003   Printable Copy   Create Case

Set Name side by side	Query	Hit Count	Set Name result set
DB=USPT,PGPB,JPAB,EPAB,DWPI,TDBD; PLUR=YES; OP=OR			
L10	L9 and find$ near4 pattern$	39	L10
L9	query$ near5 applications	3065	L9
L8	6119120.uref.	2	L8
L7	5564058.pn.	2	L7
L6	5774588.pn.	2	L6
L5	5706496.pn.	2	L5
DB=USPT; PLUR=YES; OP=OR			
L4	5459739.pn.	1	L4
DB=USPT,PGPB,JPAB,EPAB,DWPI,TDBD; PLUR=YES; OP=OR			
L3	6119120.pn.	2	L3
L2	4937763.pn.	2	L2
L1	5067099.pn.	2	L1

END OF SEARCH HISTORY

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L10: Entry 27 of 39   File: USPT   Sep 18, 2001

US-PAT-NO: 6292797
DOCUMENT-IDENTIFIER: US 6292797 B1

TITLE: Method for determining actionable patterns in a database

DATE-ISSUED: September 18, 2001

INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Tuzhilin; Alexander S.	New York	NY		
Adomavicius; Gediminas	Jersey City	NJ		

ASSIGNEE-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY	TYPE CODE
New York University	New York	NY			02

APPL-NO: 09/ 130844   [PALM]
DATE FILED: August 6, 1998

PARENT-CASE:
The present application claims the benefit, under 35 U.S.C. section 119(e), of U.S.
Provisional Application No. 60/055,005, filed Aug. 7, 1997.

INT-CL: [07] G06 F 17/30

US-CL-ISSUED: 707/6; 707/3, 707/102, 707/203
US-CL-CURRENT: 707/6; 707/102, 707/203, 707/3

FIELD-OF-SEARCH: 707/6, 707/102, 707/10, 707/3, 707/203

PRIOR-ART-DISCLOSED:

U.S. PATENT DOCUMENTS

| Search Selected | | Search ALL |

	PAT-NO	ISSUE-DATE	PATENTEE-NAME	US-CL
☐	5325466	June 1994	Kornacker	395/77
☐	5572604	November 1996	Simard	382/224
☐	5581634	December 1996	Heide	382/226
☐	5586240	December 1996	Khan et al.	395/769
☐	5659743	August 1997	Adams et al.	395/621
☐	5731986	March 1998	Yang	364/491
☐	5764974	June 1998	Walster et al.	707/6
☐	5774576	June 1998	Cox et al.	382/160
☐	5794239	August 1998	Walster et al.	707/6
☐	5809499	September 1998	Wong et al.	707/6
☐	5832182	November 1998	Zhang et al.	707/10
☐	5857169	January 1999	Seide	704/256

OTHER PUBLICATIONS

Hambaba, Intelligent Hybrid System for Data Mining, IEEE Catalog No. 96TH8177, p. 111, Mar. 1996.*

Kamber et al. Generalization and Decision Tree Induction: Efficient Classification in Data Mining, IEEE, pp. 111-120, Apr. 1997.*

Yongjlan, Data Mining, IEEE, pp. 18-20, 1997.*

Tuzhilin et al., "A Belief-Driven Discovery Framework Based on Data Monitoring and Triggering," Center for Research on Inform Dec., 1996, pp. 1-23.

T. Imielinski et al., "DataMine: Application Programming Interface and Query Language for Database Mining", Systems for Mining Large Databases, KDD-96, pp. 256-261.

Han et al., "DMQL: A Data Mining Query Language for Relational Databases", Database Syetems Research Laboratory, pp. 27-33.

Agrawal et al., "Fast Discovery of Association Rules", pp. 307-328.

Klemettinen, "Finding Interesting Rules from Large Sets of Discovered Association Rules", University of Helsinki, pp. 1-7.

Silberchatz et al., "What Makes Patterns Interesting in Knowledge Discovery Systems", pp. 1-13.

Shen et al., "Metaqueries for Data Mining", pp. 375-397.

Matheus et al., "Selecting and Reporting What is Interesting: The Kefir Application to Healthcare Data", Advances in Knowledge Discovery and Data Mining, AAAI/MIT Press, 1995, pp. 401-419.

Agrawal et al., "Mining Association Rules between Sets of Items in Large Databases", IBM Almaden Research Center, pp. 207-216.

Silberschatz et al., "On Subjective Measure of Interestingness in Knowledge Discovery", pp. 275-281.

Piatesky-Shapiro et al., "The Interestingness of Deviations", AAA1-94 Workshop on Knowledge Discovery in Databases, KDD-94, pp. 25-36.

ART-UNIT: 211

PRIMARY-EXAMINER: Black; Thomas

ASSISTANT-EXAMINER: Coby; Frantz

ABSTRACT:

A user specifies a hierarchical action tree via user input device and user interface element. The action tree is arranged in a tree of file directories, with each node of the tree corresponding to a file directory (or path). The user then specifies classes of patterns assigned to each node (directory) of the tree using data mining queries or pattern templates. Once the system is so initialized, the pattern templates and data mining queries are executed, retrieving the patterns specified by the user from a database. The retrieved patterns assigned to a node of the tree are then stored in a file in the corresponding file directory. The user may now act on the discovered patterns and use the organized file structure. A pattern discovery optimization element periodically checks if the database has changed substantially, and if it has re-executes the data mining queries and pattern templates which update the contents of the file structure accordingly.

26 Claims, 5 Drawing figures

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L10: Entry 38 of 39   File: USPT   Dec 10, 1996

US-PAT-NO: 5584024
DOCUMENT-IDENTIFIER: US 5584024 A

TITLE: Interactive database query system and method for prohibiting the selection of
semantically incorrect query parameters

DATE-ISSUED: December 10, 1996

INVENTOR-INFORMATION:
NAME	CITY	STATE	ZIP CODE	COUNTRY
Shwartz; Steven P.	Orange	CT		

ASSIGNEE-INFORMATION:
NAME	CITY	STATE	ZIP CODE	COUNTRY	TYPE CODE
Software AG				DE	03

APPL-NO: 08/ 217099   [PALM]
DATE FILED: March 24, 1994

INT-CL: [06] G06 F 17/30, G06 F 17/27

US-CL-ISSUED: 395/604; 395/922, 395/757, 364/274.2, 364/275.4, 364/283.3, 364/DIG.1,
364/972.2, 364/974.6, 364/DIG.2
US-CL-CURRENT: 707/4; 704/7, 706/45, 706/922, 706/934

FIELD-OF-SEARCH: 395/600, 395/922, 364/419.01, 364/419.07, 364/974.6, 364/972.2,
364/274.2, 364/274.7, 364/275.1, 364/275.4, 364/283.3, 364/282.1

PRIOR-ART-DISCLOSED:

U.S. PATENT DOCUMENTS

| Search Selected | | Search ALL |

'PAT-NO	ISSUE-DATE	PATENTEE-NAME	US-CL
☐ 4506326	March 1985	Shaw et al.	364/300
☐ 4688195	August 1987	Thompson et al.	364/300
☐ 4689737	August 1987	Grant	364/200
☐ 4736296	May 1988	Katayama et al.	364/419
☐ 4811207	March 1989	Hikita et al.	364/200
☐ 4829423	May 1989	Tennant et al.	364/200
☐ 4839853	June 1989	Deerwester et al.	364/900
☐ 4914590	March 1990	Loatman et al.	364/419
☐ 4930071	May 1990	Tou et al.	364/300
☐ 4931935	May 1990	Ohira et al.	364/419
☐ 4943933	July 1990	Miyamoto et al.	364/513
☐ 4974191	November 1990	Amirghodsi et al.	364/900
☐ 4994967	February 1991	Asakawa	364/419
☐ 5099426	March 1992	Carlgren et al.	364/419
☐ 5175814	December 1992	Anick et al.	395/161
☐ 5197005	March 1993	Shwartz et al.	395/600
☐ 5204947	April 1993	Bernstein et al.	395/157
☐ 5237502	August 1993	White et al.	364/419
☐ 5255386	October 1993	Prager	395/600
☐ 5265014	November 1993	Haddock et al.	364/419
☐ 5265065	November 1993	Turtle	395/600
☐ 5349526	September 1994	Potts, Sr. et al.	364/419.1
☐ 5386556	January 1995	Hedim et al.	395/600

FOREIGN PATENT DOCUMENTS

FOREIGN-PAT-NO	PUBN-DATE	COUNTRY	US-CL
0287310	October 1988	EP	
0387226	September 1990	EP	
63-219034	September 1988	JP	

OTHER PUBLICATIONS

Wu, "A Knowledge-Based Database Assistant With A Menu Based Natural Language User-Interface" 10 Oct. 1993, IEICI: Trans. Inf. & Syst. V. E76-D N. 10 pp. 1276-1287.
Wu et al, "KDA: A Knowledge-Based Database Assistant With Query Guiding Facility" 5 Oct. 1992, pp. 443-453, IEEE Transactions On Knowledge & Data Eng. V. 4 N. 5.
Cha, "Kaleidoscope: A Cooperative Menu Guided Query Inerface (SQL Version)," 1990, IEEE, Artifical Intelligence Applications.
Whitaker and Bonnell "Functional Modelling Of Intelligent Systems Using A Blackboard Model" 1992, pp. 1 to 12, The Journal Of Knowledge Eng. V 5, N. 1.
Winston, P., "Language Understanding," Artificial Intelligence, 9:291-334 (1984).
Rich, E., "Natural Lanugage Interfaces," Computer, pp. 39-47 (Sep. 1984).
Manferdelli, J. L., "Natural Language Interfaces: Benefits, Requirements, State of the Art and Applications," AI East, Oct. 1987.
Schank, R. C., et al, "Inside Computer Understanding: Five Programs Plus Miniatures," 14:354-372, LEA, Publishers, Hillsdale, NJ (1981).
Hendrix, G., "The Lifer Manual: A Guide to Building Practical Natural Language Interfaces" (Technical Note 138); SRI International, Feb. 1977.
Hendrix, G., "Human Engineering for Applied Natural Language Processing" (Technical Note 139); SRI International, SRI Project 740D32 CTC, Feb 1977.
Kao, M., et al, "Providing Quality Responses with Natural Language Interfaces: The Null Value Problem," IEEE 14:7, 959-984, Jul., 1988.
Chapter 6, "Queries," Building Access Z Applications, 1995.

Chapter 8, "Using Query by Example," Using Access 2 for Windows, Sp. Ed.
Chapter 9, "Querying Your Data," Inside Paradox 5 for Windows, 1994.
Cinque, L., et al, "An Expert Visual Query System," J. Vis. Lang. and Comp.,
2:101-113 (1991).
Meng, W., et al. "A Theory of Translation From Relational Queries to Hierarchial
Queries," IEEE Transactions on Knowledge and Data Engineering, 7:2, 228-245, Apr.
1995.
Jakobson, G., et al, "CALIDA: A System for Integrated Retrieval from Multiple
Heterogeneous Databases," Proceedings of the 3rd Int'l Conf. on Data and Knowledge
Bases: Improving Usability and Responsiveness, Jun. 28-30, Jerusalem, Israel.

ART-UNIT: 237

PRIMARY-EXAMINER: Amsbury; Wayne

ASSISTANT-EXAMINER: Choules; Jack M.

ABSTRACT:

A database query system includes a query assistant that permits the user to enter
only queries that are both syntactically and semantically valid (and that can be
processed by an SQL generator to produce semantically valid SQL). Through the use of
dialog boxes, a user enters a query in an intermediate English-like language which
is easily understood by the user. A query expert system monitors the query as it is
being built, and using information about the structure of the database, it prevents
the user from building semantically incorrect queries by disallowing choices in the
dialog boxes which would create incorrect queries. An SQL generator is also provided
which uses a set of transformations and pattern substitutions to convert the
intermediate language into a syntactically and semantically correct SQL query.

The intermediate language can represent complex SQL queries while at the same time
being easy to understand. The intermediate language is also designed to be easily
converted into SQL queries. In addition to the query assistant and the SQL
generator, an administrative facility is provided which allows an administrator to
add a conceptual layer to the underlying database making it easier for the user to
query the database. This conceptual layer may contain alternate names for columns
and tables, paths specifying standard and complex joins, definitions for virtual
tables and columns, and limitations on user access.

27 Claims, 32 Drawing figures

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L3: Entry 1 of 2   File: USPT   Sep 12, 2000

US-PAT-NO: 6119120
DOCUMENT-IDENTIFIER: US 6119120 A

TITLE: Computer implemented methods for constructing a compressed data structure
from a data string and for using the data structure to find data patterns in the
data string

DATE-ISSUED: September 12, 2000

INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Miller; John W.	Kirkland	WA		

ASSIGNEE-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY	TYPE CODE
Microsoft Corporation	Redmond	WA			02

APPL-NO: 08/ 673427   [PALM]
DATE FILED: June 28, 1996

INT-CL: [07] G06 F 17/30

US-CL-ISSUED: 707/101; 707/6, 707/7, 707/3
US-CL-CURRENT: 707/101; 707/3, 707/6, 707/7

FIELD-OF-SEARCH: 382/229, 382/230, 382/231, 707/6, 707/3, 707/7, 707/101, 707/2

PRIOR-ART-DISCLOSED:

U.S. PATENT DOCUMENTS

| Search Selected | | Search ALL |

	PAT-NO	ISSUE-DATE	PATENTEE-NAME	US-CL
☐	5459739	October 1995	Handley et al.	371/136

OTHER PUBLICATIONS

"Dynamic Programming Alignment of Sequences Representing Cyclic Patterns", by Jens
Gregor and Michael G. Thomason, IEEE Transactions on Pattern Analysis and Machine
Intelligence, vol. 15, No. 2, pp. 129-135, Feb. 1993.
"Searching Genetic Databases on Splash 2", by Dzung T. Hoang, Proceedings IEEE
Workshop on FPGAs for Custom Computing Machines (Cat. No. 93TH0535-5), pp. 185-191,
Apr. 5, 1993.
"Rapid-2, An Objecti-Oriented Association Memory Applicable to Genome Data
Processing", by Denis Archambaud, Pascal Faudemay, and Alain Greiner Proceedings of
the Twenty-Seventh Annual Hawaii International Conference on System Sciences, pp.
150-159, Jan. 1994.
"A Faster Algorithm Computing String Edit Distances", William J. Masek and Michael
S. Paterson, Journal of Computer and System Sciences, 20, pp. 18-31, Aug. 6, 1979.
"Synthesis and Recognition of Sequences", by S.C. Chan and A.K.C. Wong, IEEE
Transactions on Pattern Analysis and Machine Intelligence, vol. 13, No. 12, pp.
1245-1255, Dec. 1991.
"Efficient Systolic String Matching", by G.M. Megson, Electronic Letters, vol. 26,
No. 24, pp. 2040-2042, Nov. 1990.

ART-UNIT: 273

PRIMARY-EXAMINER: Au; Amelia

ASSISTANT-EXAMINER: Frederick, II; Gilberto

ABSTRACT:

A method for constructing a data structure for a data string of characters includes producing a matrix of sorted rotations of the data string. This matrix defines an A array which is a sorted list of the characters in the data string, a B array which is a permutation of the data string, and a correspondence array C which contains correspondence entries linking the characters in the A array to the same characters in the B array. A reduced A' array is computed to identify each unique character in the A array and a reduced C' array is computed to contain every s.sup.th entry of the C array. The B array is segmented into blocks of size s. During a search, the A' and C' arrays are used to index the B array to reconstruct any desired row from the matrix of rotations. Through this representation, the matrix of rotations can thus be used as a conventional sorted list for pattern matching or information retrieval applications. A data structure containing only the A', B, and C' has very little memory overhead. The B array contains the same number of characters as the original data string, and can be compressed in a block wise manner to reduce its size. The A' array is a fixed size equal to the size of the alphabet used to construct the data string, and the C' array is variable size according to the relationship n/s, where n is the number of characters in the data string and s is the size of the blocks of the B array. Accordingly, the data structure enables a tradeoff between access speed and memory overhead, the product of which is constant with respect to block size s.

35 Claims, 8 Drawing figures

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| Help | Logout | Interrupt |

| Main Menu | Search Form | Posting Counts | Show S Numbers | Edit S Numbers | Preferences | Cases |

Search Results -

Terms	Documents
L53 and list	5

Database:

US Patents Full-Text Database
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Search: | Refine Search |

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Search History

DATE: **Wednesday, March 05, 2003**   Printable Copy   Create Case

Set Name side by side	Query	Hit Count	Set Name result set
DB=USPT,PGPB,JPAB,EPAB,DWPI,TDBD; PLUR=YES; OP=OR			
L54	L53 and list	5	L54
L53	L47 and attribute-value$	6	L53
L52	L48 and attribute-value$	1	L52
L51	L50 and attribute-value$	1	L51
L50	L49 and list	102	L50
L49	L48 and query	134	L49
L48	L47 and (datamining or data with mining)	157	L48
L47	on-line near analytical near process$ or olap	514	L47
L46	5564058.pn. and attribute-value	0	L46
L45	137 and 5781896.pn.	0	L45
L44	137 and 5774588.pn.	0	L44
L43	141 and 5774588.pn.	0	L43
L42	L41 and list	7	L42
L41	137 and pre-comput$	7	L41
L40	L39 and query	2	L40

L39	l13 and attribute-value	3	L39
L38	L37 and attribute-value	1	L38
L37	L36 and least same value	113	L37
L36	l13 and great$ same value	250	L36
L35	l13 and greatest-value	0	L35
L34	(((382/229)!.CCLS.))	453	L34
L33	(((382/$)!.CCLS.))	34477	L33
L32	(((705/5)!.CCLS.))	368	L32
L31	(((705/$)!.CCLS.))	18624	L31
L30	(((707/$)!.CCLS.))	14571	L30
L29	((707/1 |707/2 |707/3)!.CCLS.)	5127	L29

DB=USPT; PLUR=YES; OP=OR

L28	5819282.pn.	1	L28
L27	5878426.pn.	1	L27
L26	5966139.pn.	1	L26

DB=USPT,PGPB,JPAB,EPAB,DWPI,TDBD; PLUR=YES; OP=OR

L25	L22 and attribute-value	1	L25
L24	L23 and list	10	L24
L23	L22 and attribute	14	L23
L22	L21 and query	16	L22
L21	L20 and (least same value or lesser same value)	23	L21
L20	L18 and find$ same great$ same value	42	L20
L19	L18 and find$ near list	6	L19
L18	data adj mining or datamining	1959	L18
L17	L16 and (least same value or lesser same value)	67	L17
L16	L15 and find$ same great$ same value	105	L16
L15	((707/3)!.CCLS.)	2540	L15
L14	L13 and values	636	L14
L13	find$ near list	838	L13
L12	L4 and attribute-value$ same list	1	L12
L11	L5 and attribute-value$ same list	0	L11
L10	L6 and attribute-value$ same list	0	L10
L9	L6 and attribute-value same list	0	L9
L8	L6 and attribute-value near list	0	L8
L7	L6 and attribute-value and list	7	L7
L6	L5 and comput$	910	L6
L5	L4 and query	927	L5
L4	"data mining"	1941	L4
L3	"analytical mining"	0	L3
L2	"on-line analytical mining"	0	L2
L1	"on-line analytical mining" or olam	6	L1

END OF SEARCH HISTORY

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L7: Entry 6 of 7   File: USPT   Mar 28, 2000

US-PAT-NO: 6044366
DOCUMENT-IDENTIFIER: US 6044366 A

TITLE: Use of the UNPIVOT relational operator in the efficient gathering of
sufficient statistics for data mining

DATE-ISSUED: March 28, 2000

INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Graffe; Goetz	Bellevue	WA		
Fayyad; Usama	Merce Island	WA		
Chaudhuri; Surajit	Redmond	WA		

ASSIGNEE-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY	TYPE CODE
Microsoft Corporation	Redmond	WA			02

APPL-NO: 09/ 029953   [PALM]
DATE FILED: March 16, 1998

INT-CL: [07] G06 F 17/30

US-CL-ISSUED: 707/2; 707/3, 707/4, 707/6, 707/102
US-CL-CURRENT: 707/2; 707/102, 707/3, 707/4, 707/6

FIELD-OF-SEARCH: 707/2, 707/3, 707/5, 707/6, 707/4, 707/102

PRIOR-ART-DISCLOSED:

U.S. PATENT DOCUMENTS

| Search Selected | Search ALL |

	PAT-NO	ISSUE-DATE	PATENTEE-NAME	US-CL
☐	5201047	April 1993	Maki et al.	707/4
☐	5511190	April 1996	Sharma et al.	707/1
☐	5710915	January 1998	McElhiney	707/3
☐	5713020	January 1998	Reiter et al.	707/102
☐	5748905	May 1998	Hauser et al.	709/249
☐	5819282	October 1998	Hooper et al.	707/103
☐	5878426	March 1999	Plasek et al.	707/102
☐	5966139	October 1999	Anupam et al.	345/440

OTHER PUBLICATIONS

Automating the Analysis and Cataloging of Sky Surveys, Advances in Knowledge
discovery and Data Mining, Chapter 19, pp. 471-493, Fayyad, Usama M., Djorgovski, S.
George and Weir, Nicholas, AAAI Press/The MIT Press, Menlo Park California;
Cambridge, MA; London, England (1996).
SLIQ: A Fast Scalable Classifier for Data Mining, EDBT Conference, Mehta, Manish,

*Agrawal, Rakesh and Ristanen, Jorma (1996).
From Digitized Images to Online Catalogs. AI Magazine, pp. 51-66, Fayyad, Usama M.,
Djorgovski, S.G. and Weir, Nicholas, (Summer 1996).
Data Mining and Knowledge Discovery: Making Sense Out of Data,Fayyad, Usama M.
Submitted to IEEE Expert, for publication in the special issue on Data mining (Aug.,
1996).
Panning for Data Gold, New Scientist. No. 2031, Weekly E1-80, pp. 31-33 (May 25,
1996).

ART-UNIT: 277

PRIMARY-EXAMINER: Homere; Jean R.

ABSTRACT:

The invention concerns a method and apparatus for generating a tabulation of counts
of occurrences of value combinations of a set of attributes over a relation
consisting of a set of database records. The gathered counts (also referred to as
sufficient statistics) of attribute occurrences or correlation counts is most
preferably used in building a classification or density estimation model from the
database records that can be used to predict some attribute values based on other
attribute values. A new SQL operator designated the `UNPIVOT` operator operates by
scanning the database records and for each record reorganizes that data to form an
UNPIVOTED data record that include the combinations of attribute name, attribute
value and the values for one or more selected class attributes. The UNPIVOTED table
can be used to produce the desired sufficient statistics in one scan of the data
using standard database engines. While materialization of UNPIVOTED table would
cause a large added scan cost overhead, the UNPIVOT operator allows us to achieve
the counts without the added cost by combining the UNPIVOT operator with other SQL
`select` and `group by` operators the UNPIVOTED table can be counted without the
need for materializing it. The result is a guaranteed one pass algorithm that does
not incur the added scan cost factor. The savings in scan cost can extend to several
orders of magnitude compared to other methodologies for getting the counts supported
by current database engines. The sufficient statistics so gathered can be used to
drive a variety of data mining algorithms.

21 Claims, 2 Drawing figures

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End of Result Set

☐ | Generate Collection | | Print |

L25: Entry 1 of 1   File: USPT   Dec 10, 2002

US-PAT-NO: 6493637
DOCUMENT-IDENTIFIER: US 6493637 B1

TITLE: Coincidence detection method, products and apparatus

DATE-ISSUED: December 10, 2002

INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Steeg; Evan W.	Kingston			CA

ASSIGNEE-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY	TYPE CODE
Queen's University at Kingston	Kingston			CA	03

APPL-NO: 09/ 404714   [PALM]
DATE FILED: September 24, 1999

PARENT-CASE:
This is a continuation of International Application PCT/CA98/00273, with an
international filing date of Mar. 23, 1998, now abandoned, which claims benefits of
the filing date of U.S. Provisional application 60/041472, filed Mar. 24, 1997.

INT-CL: [07] G06 F 17/30

US-CL-ISSUED: 702/19
US-CL-CURRENT: 702/19

FIELD-OF-SEARCH: 702/19

PRIOR-ART-DISCLOSED:

FOREIGN PATENT DOCUMENTS

FOREIGN-PAT-NO	PUBN-DATE	COUNTRY	US-CL
2 283 840	May 1995	GB	

OTHER PUBLICATIONS

Conner et al. Proc. Natl. Acad. Sci. USA, 80, 278-282, Jan. 1983.*
Steeg et al., "Introduction of Specific Point Mutations into RNA Polymerase II by
Gene Targeting in Mouse Embryonic Stem Cells: Evidence for a DNA Mismatch Repair
Mechanism," Proc. Natl. Acad. Sci. USA, vol. 87, No. 12, National Academy of
Sciences USA, Jun. 15, 1990, pp. 4680-4684.
R. Agrawal et al., "Fast Discovery of Association Rules," Chapter 12, Advances in
Knowledge Discovery and Data Mining, pub. American Association for Artificial
Intelligence, Menlo Park, California, .COPYRGT.1996, pp. 307-328.
D. Altschuh et al., "Correlation of Co-ordinated Amino Acid Substitutions with
Function in Viruses Related to Tobacco Mosaic Virus," J. Mol. Biol., vol. 193, 1987,
pp. 693-707.
R. Bahadur, "A Representation of the Joint Distribution of Responses to n
Dichotomous Items," Chapter 9, Studies in Item Analysis, ed. H. Solomon, Stanford
University Press, 1962, pp. 158-175.
Carr et al., "Templates for Looking at Gene Expression Clustering," Statistical
Computing & Statistical Graphics Newsletter, pp. 20-29 (Apr. 1997).
A.F.W. Coulson et al., "Protein and nucleic acid sequence database searching: a

suitable case for paral● processing," The Computer Jou   l, vol. 30, No. 5, Oct. 1987, Cambridge, Great Britain, pp. 420-424.

U. Goebel et al., "Correlated Mutations and Residue Contacts in Proteins," Proteins, vol. 18, 1994, pp. 309-317.

R. Guigoet al., "Inferring Correlation between Database Queries: Analysis of Protein Sequence Patterns," IEEE Transactions on Pattern Analysis and Machine Intelligence, vol. 15, No. 10, Oct. 1993, New York, New York, USA, pp. 1030-1041.

D. Heckerman, "Bayesian Networks for Knowledge Discovery," Advances in Knowledge Discovery and Data Mining, Chapter 11, pub. American Association for Artificial Intelligence, Menlo Park, California, .COPYRGT.1996, pp. 273-306.

W. Hoeffding, "Probability Inequalities for Sums of Bounded Random Variables," Journal of the American Statistical Association, vol. 58, No. 301, Mar. 1963, pp. 13-30.

Klingler, T. et al., "Discovering Structural Correlations in .alpha.-Helices," Protein Science, vol. 3, 1994, pp. 1847-1857.

B. Korber et al., "Covariation of Mutations in the V3 Loop of Human Immunodeficiency Virus Type 1 Envelope Protein: an Information Theoretic Analysis," Proc. Natl. Acad. Sci. USA, vol. 90, Aug. 1993, pp. 7176-7180.

A. Krogh et al., "Hidden Markov Models in Computational Biology: Applications to Protein Modeling," J. Mol. Biol., vol. 235, 1994, pp. 1501-1531.

A.S. Lapedes et al., "Use of Adaptive Networks to Define Highly Predictable Protein Secondary-Structure Classes," Machine Learning, vol. 21, No. 1 / 2, Oct.-Nov. 1995, Boston, Massachusetts, USA, pp. 103-124.

C. de Marcken, "Unsupervised Language Acquisition," Ph.D. Thesis, M.I.T. (Sep. 1996) (title page, abstract, and pp. 82-93).

P. Michaud, "Clustering Techniques," Future Generation Computer Systems, vol. 13, Nov. 1997, NL, pp. 135-147.

R. Paturi et al., "The Light Bulb Problem," Information and Computation, vol. 117, No. 2, Mar. 1995, pp. 187-192.

Steeg, E. et al., "The Efficient Determination of Higher-Order Features in Protein Sequence Data" (Working Paper), Aug. 27, 1993, pp. 1-18. (FIGs. lost).

Steeg, E. et al., "Application of a Noval and Fast Information-Theoretic Method to the Discovery of Higher-Order Correlations in Protein Databases" in Proceedings of the 1998 Pacific Symposium on Biocomuting. Ed. Altman et al., World Scienctific Publishing Co., New Jersey, pp. 573-584 (Jan. 4-9, 1998).

J. Williams et al., "A Process for Detecting Correlations between Dichotomous Variables," B. Kleinmutz, ed., Clinical Information Processing by Computer, Holt, Rinehart and Winston, New York, 1969, pp. 100-128.

ART-UNIT: 1631

PRIMARY-EXAMINER: Borin; Michael

ABSTRACT:

A method and system for detecting coincidences in a data set of objects, where each object has a number of attributes. Iteratively, equally-sized subsets of the data set of sampled, and coincidences (co-occurrences of a plurality of attribute values in one or more objects in the subset) are recorded. For each coincidence of interest, the expected coincidence count is determined and compared with the observed coincidence count; this comparison is used to determine a measure of correlation for the plurality of attributes for the coincidence. The resulting set of k-tuples of correlated attributes is reported, a k-tuple of correlated attributes being a plurality of attributes for which the measure of correlation is above a predetermined threshold. The method and system (implemented on an array of processing nodes) is suitable for protein structure analysis, e.g. in HIV research.

39 Claims, 22 Drawing figures

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DATE-ISSUED: June 29, 1999

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U.S. PATENT DOCUMENTS

| Search Selected | Search ALL |

	PAT-NO	ISSUE-DATE	PATENTEE-NAME	US-CL
☐	5367619	November 1994	Dipaolo et al.	395/149
☐	5495608	February 1996	Antoshenkov	
☐	5560007	September 1996	Thai	
☐	5592666	January 1997	Perez	
☐	5664172	September 1997	Antoshenkov	
☐	5666528	September 1997	Thai	
☐	5742738	April 1998	Koza et al.	395/13

ART-UNIT: 271

PRIMARY-EXAMINER: Amsbury; Wayne

ASSISTANT-EXAMINER: Lewis; Cheryl R.

ABSTRACT:

A system and method for computer modeling (10) and for creating hyperstructures (51) which are to be contained in a computer memory, which obtains measurements of physical objects and activities which are related to the entity to be modeled in the computer hyperstructure (51). The measurements are transformed into computer data which corresponds to the physical objects and activities external to the computer system (10). A plurality of independent dimensions (54) are created, where each dimension (54) includes at least one element (58). A plurality of cells (56) are created, each of which is associated with the intersection of two or more elements (58), each cell (56) being capable of storing at least one value. At least one rule domain (60) is associated with at least one cell (56), the rule domain (60) including at least one rule for assigning values to the associated cells (56). A domain modeling rule set (126) is prepared (300), which determines which of the rules will provide the value associated with each of the cells (56) wherein application of the domain modeling rule set (126) to the hyperstructure (51) causes a physical transformation of the data corresponding to said physical objects which are modeled in said hyperstructure (51).

Also disclosed is a method for querying computer hyperstructures (51), a Hyperstructure Query Language, and a "cell explorer", which allows direct viewing of the applied formulas that produce a specific value for a cell (56).

18 Claims, 17 Drawing figures